Pro-face
HMI — Human Machine Interface

KLINKMANN

User Interface Panels
for PLCs and other CPU devices

PROGRAMMABLE OPERATOR INTERFACES

POWER

SERIES

32 bit
RISC CPU POWER
- low cost volume HMI
- easy configuring with PC
- various interfaces for PLCs, LANs, fieldbuses, networks, wireless etc.

CERTIFIED
JQA
MANAGEMENT SYSTEM
QUALITY SYSTEM

GP SERIES
Pro-face

ISO9001
JQA-1367

Faster, Smarter, Brighter

**Pro-face's New GP77 series Operator Interfaces with Super
High-Speed 100 MHz RISC CPU**

**Next generation programmable operator interface -
"From PLC's Face to its Brain" - the Power GP Series!**

Today's rapid pace of high-tech innovation has increased the need for industrial automation.

Pro-face's "GP Series" programmable operator interfaces, in pursuit of more comfortable communication between human and machines, have been striving for the best: high performance and advanced design.

Going through a series of innovation, GP Series have gained popularity among many users.

"From PLC's Face to its Brain" - Pro-face's lineup of new concept programmable display panels each pursues the primary goals of the next generation of industrial automation, "Faster, Smarter and Brighter".

Power GP Series Full Line up!!
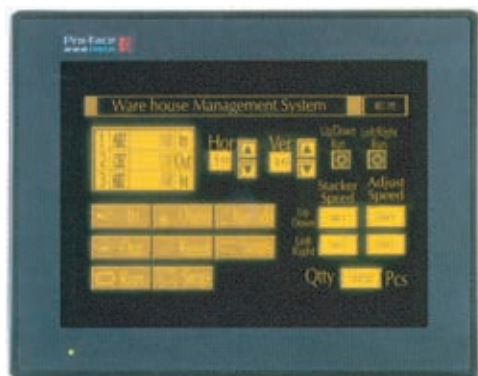
32 bit RISC CPU POWER

GP-577RT

- 100MHz RISC CPU
- Resolution : 640X480 pixels
- 10.4 inch TFT Color LCD
- FLASH EPROM 2MB
  (Screen Memory)

GP-577RS

- 100MHz RISC CPU
- Resolution : 640X480 pixels
- 10.4 inch STN Color LCD
- FLASH EPROM 2MB
  (Screen Memory)

GP-477RE

- 100MHz RISC CPU
- Resolution : 640X400 pixels
- 9 inch High Intensiry EL
- FLASH EPROM 2MB
  (Screen Memory)

GP-377RT

- 100MHz RISC CPU
- Resolution : 320X240 pixels
- 6 inch TFT Color LCD
- FLASH EPROM 2MB
  (Screen Memory)

Multi Unit E

(Model: GP377RT-MLTE41)
*Only for GP-377R

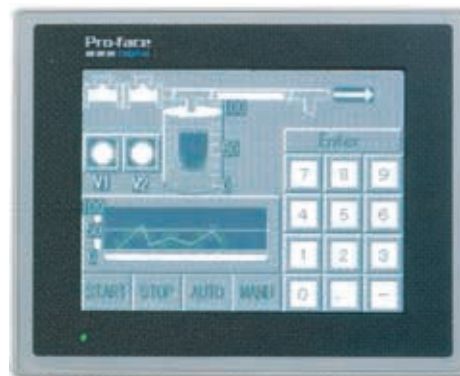- 2-Way (via Ethernet)
  communication
- Printer I/F
- CF card support

GP-377S

NEW

- 100MHz RISC CPU
- Resolution : 320X240 pixels
- 6 inch STN Color LCD
- FLASH EPROM 1MB
  (Screen Memory)

$C \epsilon$ (UL) c(UL)

GP-377L

NEW

- 100MHz RISC CPU
- Resolution : 320X240 pixels
- 6 inch Monochrome LCD
- FLASH EPROM 1MB
  (Screen Memory)

$C \epsilon$ (UL) c(UL)

New Low-Cost, High Performance 6 inch Models

●Ultra-fast 100MHz RISC CPU equipped

Quick startup and screen change for smooth operation!
3 times faster overall performance. [1]

●2 times brighter [1] / 30,000 hours [2] backlight lifetime

2 times brighter display and 1.5 times longer backlight lifetime.

[1] Compared to GP-370S and GP-370L.
[2] 24 hours/day use at normal operating temperatures.

●High Quality Asian Fonts

Chinese, Korean and Taiwanese fonts displayed on GP377 S/L units are, now, available with smoother quality of 32X32 dots.

●Back light Burn-out Detection

For your safetly operation, the backlight can be monitored on the front panel LED with the Touch panel Input control settings.

China		Korea		Taiwan	
16X16	32X32	16X16	32X32	16X16	32X32
承騁 赤翅	承騁 赤翅	겆걸 겶겷	겆걸 겶겷	池迅 辰並	池迅 辰並

GP77 Series Standard Features

Faster

Fast screen changes for smooth operation

New 100MHz chip is 3 times faster!*

The GP77's RISC CPU calls up and opens screens in a flash, providing smooth, "no-wait" operation.

* Compared with GP70 series unit running demo application.

Reduces oveall debugging and maintenance time

Data transfer is twise as fast

The GP77R's blistering 115.2 Kbps* speed cuts your PC to GP data transfer time in a half. It also means you spend your valuable time maintaining and debugging, instead of waiting for data download or screens to change.

Type R
115.2Kbps   V4.0

faster

GP70 Series   38.4Kbps
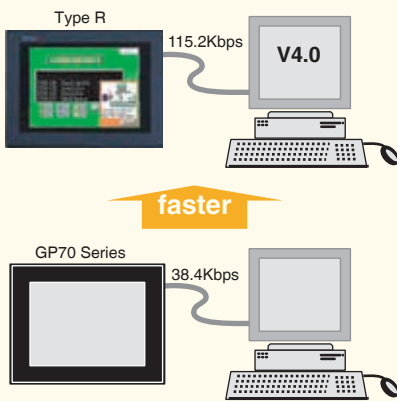
* Some PCs do not support 115.2kbps data transfer

32 bit RISC CPU POWER

Brighter

Clear viewing in bright areas

Both TFT and STN displays are 2 times brighter!*

The GP77's screens are twise as bright as GP70 series units, and rival that of a standart CRT.

* Compared with GP70 series.

Adjusts to any environment

Select from 4 brifhtness levels*

You can easily adjust the GP77's brightness level to fit your operation needs.

* GP-477RE has 2 levels of brightness

Clearer

Create active and vivid applications

64 color TFT and STN Displays

The GP77R's easy-to-read 64 color display allows you to create dynamic application screens.

### Alarm types are recognizable at a glance

3 flashing speeds*

Screen data ON/OFF blinking speeds are selectable (slow, medium, fast), making alarms and data easy to recognize.

* Available with GP-577RT, GP-577RS and GP-377RT/S only.

Long - life backlight

In additionto improved brightness, backlight lifetime is significantly longer than GP 70 Series units. Backlights are also user-replaceable ang easily changed.*1
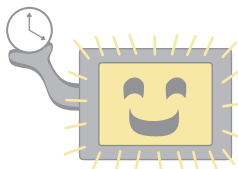
GP-377 RT (50,000 hours)*2
GP-577 RT (40,000 hours)*2
GP-377 S/L (30,000 hours)*2
GP-377 RS (25,000 hours)*2

* 1 exept GP-377RT
* 2 Time required for backlight brightness to decrease 50%

High speed GP - to PLC communication

GP77 Series supports high speed RS-232C data transfer (115.2Kbps)

PLCs supporting 115.2Kbps*

Matsushita FP10SH
Mitsubishi Melcec QnA series
OMRON   CS-1
Sharp   JW30 series

* For more details, please contact your sales representative or Pro-face.

Built-in 2-port Function

The 2-port function, using the "Data Transfer Cable", and "Programming I/F Cable", allows direct connenctions between GP and Mitsubishi PLC. This reduces your connection costs.

* No 2-port adapter required

Programming tool

Mitsubishi PLC   Built-in 2-port function

2-port adapter

Data transfer cable

Ladder programming tool

Programming I/F cable

Mitsubishi PLC
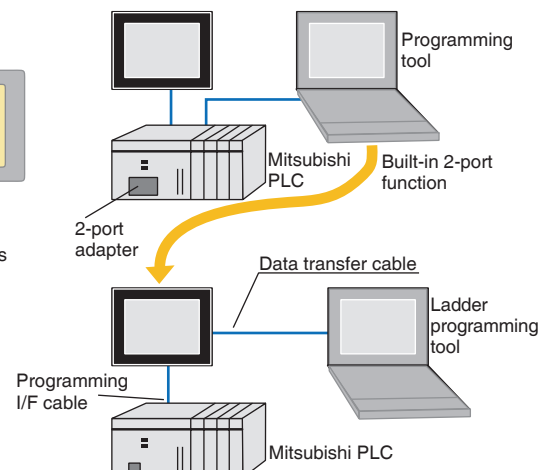
Evolving HMI-from PLC's "Face"to its "Brain"

Intelligent operator interface
The GP77R Series

Pro-face's GP77R series units help you meet the recent demands put on the workplace by ISO, PL and HACCP requirements. Pro-face's new hardware and software allows you to easily collect vital historical production maintenence data, and helps you perform esential preventive maintenence.
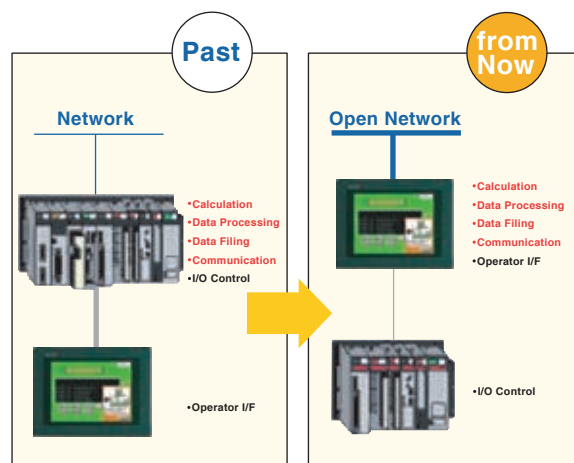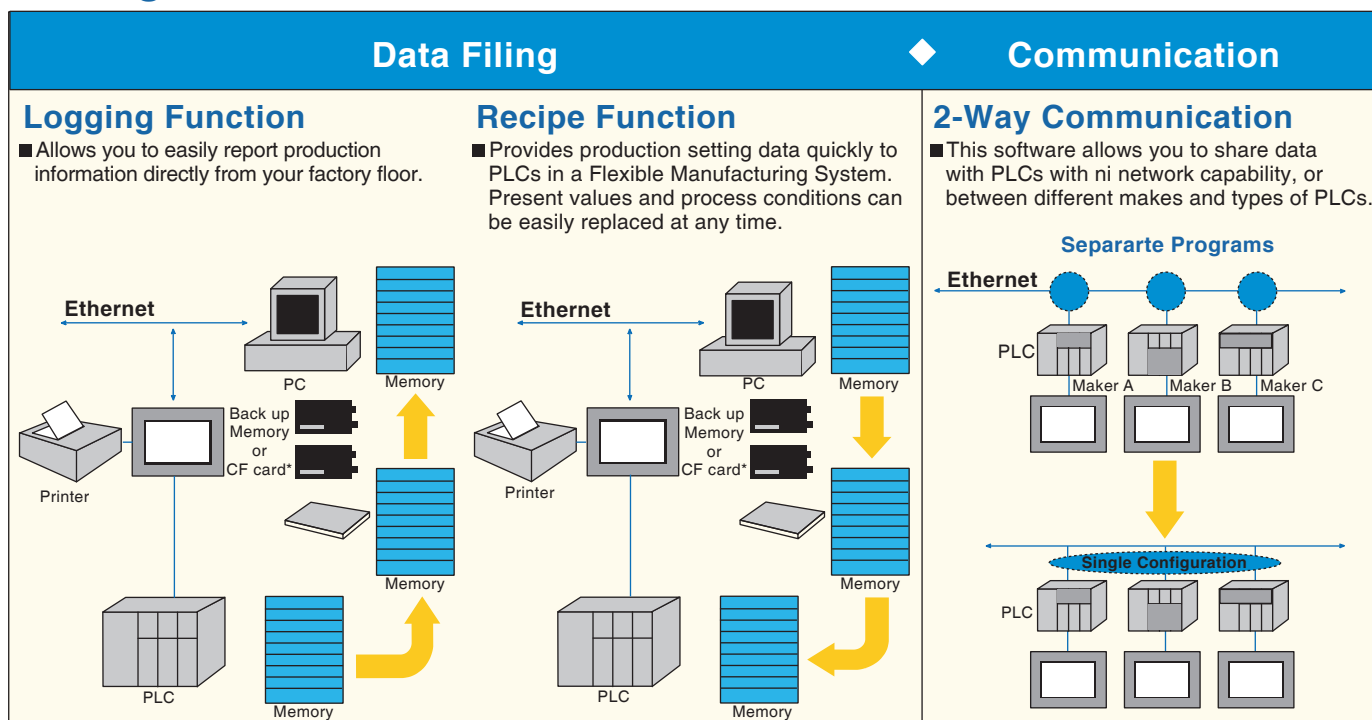
The newly developed GP77R panel transforms the role of an HMI from the "face" of the PLC ti its "brain". This adds up to significant cost and man-hour savings for the management and control of your processing information. Furthemore, the combination of high-speed I/O control between these units and connectable PLCs, and the GP77R's enhanced "intelligence" ensures that your applications perform better than ever.

Past

from Now

Network

- Calculation
- Data Processing
- Data Filing
- Communication
- I/O Control

- Operator I/F

Open Network

- Calculation
- Data Processing
- Data Filing
- Communication
- Operator I/F

- I/O Control

Intelligent Features

Data Filing	◆ Communication

Logging Function
■ Allows you to easily report production information directly from your factory floor.

Recipe Function
■ Provides production setting data quickly to PLCs in a Flexible Manufacturing System. Present values and process conditions can be easily replaced at any time.

2-Way Communication
■ This software allows you to share data with PLCs with ni network capability, or between different makes and types of PLCs.

Ethernet

PC

Memory

Printer

Back up Memory or CF card*

Memory

PLC

Memory

Ethernet

PC

Memory

Printer

Back up Memory or CF card*

Memory

PLC

Memory

Separarte Programs

Ethernet

PLC

Maker A   Maker B   Maker C

Single Configuration

PLC

New Products Supporting the GP77R Series Evolution

GP-577RT

GP-577RS

GP-377RT

GP-477RE

100MHz RISC CPU
Programmable Operator Interface
GP77R Series

Screen editor software

with Pro-Studio
(PSW-ED01-V20 or higher)

Features include the ability to Log and File PLC information. Helps to reduce PLC ladder programming processes/steps and amount of memory used.

Data collection software

with Pro-Studio
(PSW-ED01-V20 or higher)

This software allows the GP77R to act as "Ethernet gateway" and provide programless data communication between a host PC, GP77R and multiple different PLCs via an Ethernet network.

Large size / Medium size Multi Unit

GP-PRO/PB III
for Windows
(GP077-MLTE41
(GP377R-MLTE41

The optional Multi Unit E expands the GP77R Series connenctivity with an Ethernet I/F. CF card I/F and Sound output I/F for P477R/DP577R and rinter I/F for GP 377RT.

Photo: Multi Unit E
(Model: GP377R-MLTE41)

Expansion Unit

Pro-Server
with Pro-Studio
(10BASE-T)
(Model: GP070-ET41)

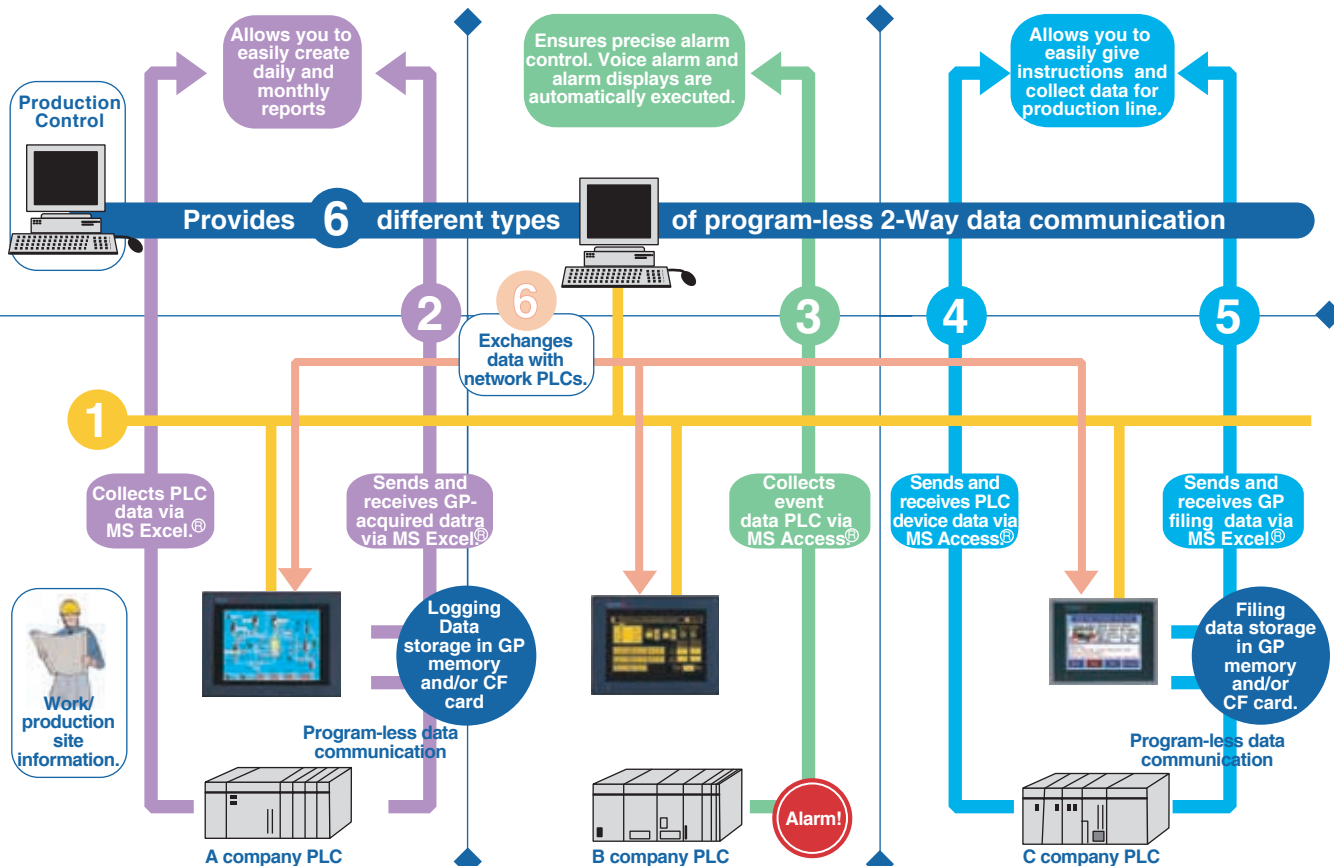This interface unit allows GP to transmit data with the host via Ethernet Network.

Allows you to monitor your production site information in real time!

Pro-Server with Pro-Studio V2.0

Logging Function
Alarm History Function
Recipe Function

Allows you to easily create daily and monthly reports

Ensures precise alarm control. Voice alarm and alarm displays are automatically executed.

Allows you to easily give instructions and collect data for production line.

Production Control

Provides 6 different types of program-less 2-Way data communication

1

2

6
Exchanges data with network PLCs.

3

4

5

Collects PLC data via MS Excel.®

Sends and receives GP-acquired datra via MS Excel®

Collects event data PLC via MS Access®

Sends and receives PLC device data via MS Access®

Sends and receives GP filing data via MS Excel®

Work/ production site information.

Logging Data storage in GP memory and/or CF card

Filing data storage in GP memory and/or CF card.

Program-less data communication

Program-less data communication

Alarm!

A company PLC

B company PLC

C company PLC

32 bit RISC CPU POWER

Polling (Optimization Function)
Data can be read from multiple GP units simultaneously, thereby reducing the number of data read requests from an application. Improves data read perfomance when using multiple GP units.

Security Function
Passwords are used to prevent data access by personel other than system administrators, thereby protecting data from problrms such as device overwriting, etc.

CF Card Transfer Function
Logging, filing and alarm data that has been "filed" via the GP's screen editor software can be transfered to another GP77R unit's CF card using an Ethernet network.*
* requires installation of Multi Unit E.

OPC Compatible (OLE for Process Control)
Microsoft's object technology OLE/ActiveX allows manufacturing related industrial applications to be easily connected.

Device Monitoring Function
Since PLC devices can be memored by simply selecting a symbol, on Pro-Studio a simple simulation can be performed prior to starting an application. With this function, multiple screens can be displayed at one time, and the IP address and device address can be input.
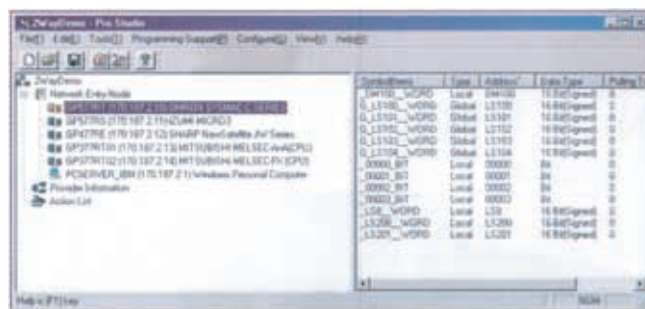
Downsize and Simplify Your Application

Using the GP series keep your systems as possible, even though your control programs get more and more sophisticated.
The touchpanel graphic operator interface, GP Series, is a state-of-the-arts intelligent equipment, which has been widely installed as a main operator panel throughout the manufacturing fields. You can operate production systems via numerous data and graphics displayed on the screen, while reducing numbers of control programming and wiring.
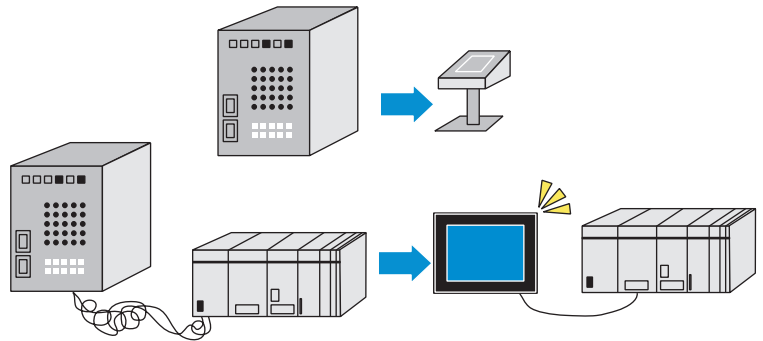
Simple Communication Methods

[Direct Access Method]

Simply select your target PLC when you create screen data. The Direct Access method allows the GP to communicate with Word and Bit devices in the PLC memory directly. Since this method is, also, called as a program-less communication, there will be no extra load on the PLC.
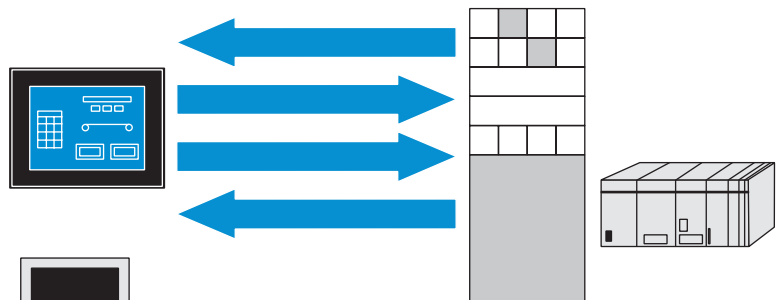
[Memory Link Method]

You can create your own communication programs to connect the GP with your specialized controllers, such as single-board computers and PCs. The GP displays data mapped from the host's memory for monitoring and operation.

| 0001 |
| 0002 |
| 0003 |
| 0004 |
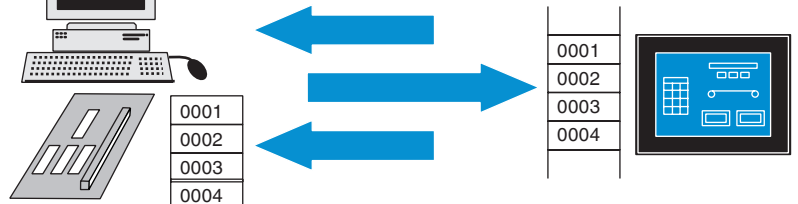
Create Unique Screens in Minutes

You can simply and freely create your own operation screens for each requirement in your applications, using a variety of powerful tools, such as the Part Box, Tags and D-Script macro program, on the GP-PRO/PB Ⅲ for Windows software. The software creation of the operator interface also, allows you easy change, debugging and reue of the data whenever required
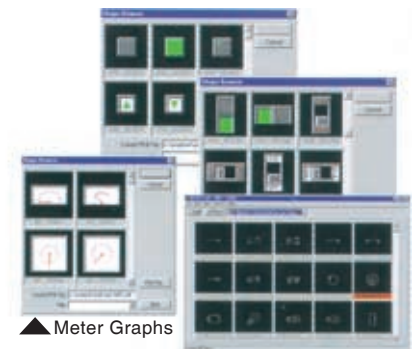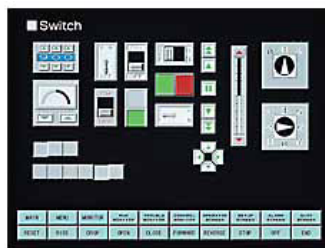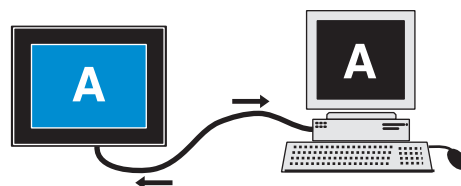
▲ Meter Graphs

▲ ISO-7000 Symbols

Minimize Your Work for Maintenance and System Expansion

After creating data, just download it to the GP unit, then connect the GP with the host via a single cable for immediate operation. Ypu can, also, simulate the GP with your PC for quick debugging, before you take it to the field.

A

A

1 POINT · Screen Creation and Editing is Easier and More Powerful Than Ever

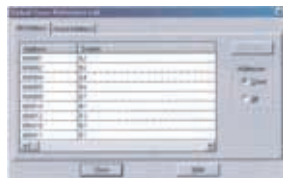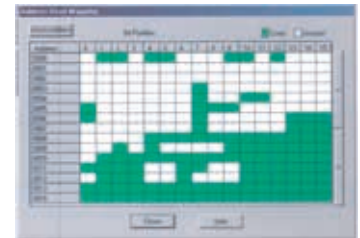## Use Your Device Addresses More Efficiently

◆Global Cross references!

● **Maintenence is easier than ever!**
(List Display)

All of a project's device addresses can be checked at a glance.

● **System Upgrades Ares Easier!**
(Map Display)

Device addresses usage can also be displayed as a chart, allowing you to easily find unused addresses.

## Quickly Check Load Screen nesting Levels

◆Nesting List!

Version 4.0 can create a Nesting List for complex screens containing multiple Load Screens. This will speed up Your screen editing as you no longer need to spend time searching for a load screen's original data.
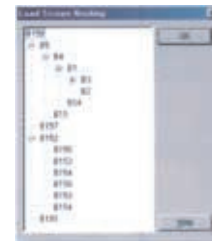
Try These Userful Functions!!

◆Enlarge and Move Objects Via Your Keyboard Cursor

Fine-tuning the position and layot of your screen objects on screen grid points via a mouse could be difficult. Version 4.0 allows you to use your keyboard's arrow keys to enlarge and move objects easily, making detailed screen creation and layot easier than ever.

Move by a dot   Enlarge by a dot
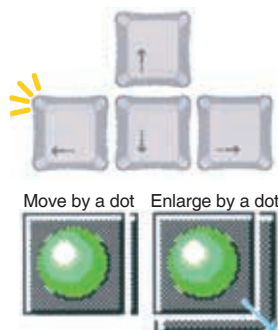
◆Direct Entry of Drawing Object Coordinate Values.

To change an object's position or size, just enter the object's coordinate values, guaranteeing 100% accurate screen layot.

◆Cursor Position Zoom.

Enlarges the area whwere the cursor is currently positioned 3 times, allowing easy editing of detailed screen drawings.

zoom up!
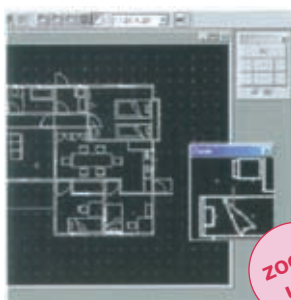
◆Hairline Cursor

Use this cursor as a standard when you align screen objects.

Pi!

◆Font selection and Mark Screens

Windows fonts can be imported as character data to a project's Mark screens via the font selection function, allowing you to create screens with a variety of types of characters.

Intelligent
Operator
Interface

Text Images

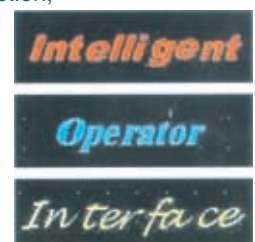## 2 Importing/Exporting Project Alarm Data ImprovesEfficiency

Improve your efficiency by reducing the amount of repetitious Alarm message editing and registration.

Alarm Editor Screen

◆**Version 4.0 allows easy editing and document control via CSV format data.**

Using the CSV format, alarm files can be exported to the spread sheet software such as MS-Excel, where alarm messages can be added and edited more efficiently. Once this work is completed, these CSV format files can be imported back to GP-PRO/PBⅢ for Windows and alarm files.
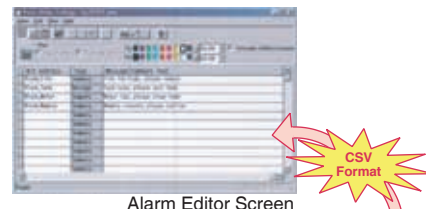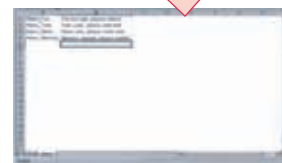
3 Extended Logging/Filing/ Programming Functions

[Logging]

◆**Improved Data Collection via "Looping"**

When the acquired logging data exceeds the GP's memory capacity, data logging can continue by simply overwriting the previosly acquired logging data. Also, logging data can be saved automatically to a CF Card with a simple setting.

[D-Script]

The number of data items, that can be tranferred

◆**Memory Batch Copy**
◆**Memory Block Initializatio**
◆**Loop Processing**
◆**Address Offset Designator**

[Filing]

◆**Transferable data items are increased**

The number of data items, that can be tranferred at one time has been increased to 1000 words.

◆**Multible data filing Folders**

Multiple folders of filing data can be stored in both the CF-Card and the GP's international memory.

GP-X10 Series screen data can be converted easily

Up loadded from GP-X10 units to GP-PRO/PBⅢ for Windows V4.0 directly and converted for the later GP models.

direct

GP-*10 Screen Data

GP-PRO/PBⅢ for Windows v4.0
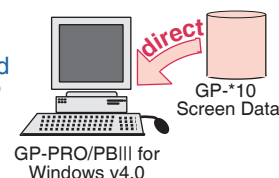
4 Expanded Range of Poweful Tools

[Wide Variety Files of Images]

◆**270 of 64-color Part images are odded for more sophicicated screens of your applications.**

[Useful Sound Messages]

◆ **Redy to use 270 message samples in the WAV format are provided.**

● Alarm has occurred.
● Confirm status.
● Now opening entrance door.
● Starting operation.
● Temperature alarm.
● Careful - Now rotating.
● Add material to hopper.

● Return loweing elevator to upper limit position.
● Now raw materials available
● This card can not be used.
● Conveyer is operating.

GP-PRO/PBⅢ for Windows Features

Intelligent operator interface

1 Parts Placement
Select from over 1800 pre-made Parts. Choose only the ones you need and place them on your screens.

2 Libraries
Muliple objects can be grouped and registered for your own library.

3 Tag Setup
A wide variety of user applications can be easily created using the Tag functions (active screen)

4 D-Script
Easy to use Macro program reduces the host controller's programming load.

Simulation

Reduces GP program debugging time

Even if you don't have a PLC available to test your new GP program, you can still quickly and easily check whether the program works as planned via this feature

* This feature is not available with Memory Link selection.

All supported PLCs are OK!

Documentation

[Automatic Documentation]
Reduces time required for creating documents

Just by selecting the items you wish to print out, you can create specification and manual documents easily. You can also use this feature to export project data in RTF format.

Just select from menu...
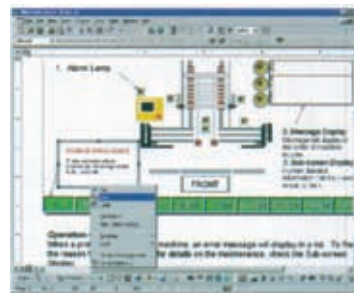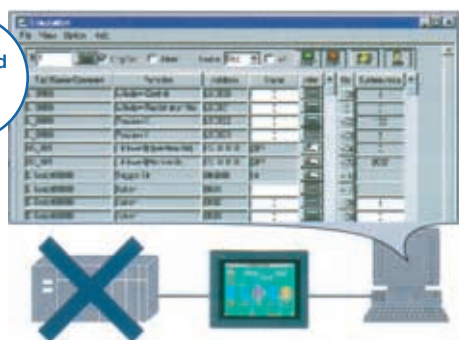
Export in RTF format

...and print!

File Managament

[Project Manager]
Simplifies Project Screen managament

Screen data can be managed via individual screen files. In addition to moving or copying screen data, simply doyble-clicking on a file name allows you to edit that screen. You can also make data files sharable through your PC network.

Project
Screen Type

Copy to another project

Open a screen with a double-click

32 bit RISC CPU POWER
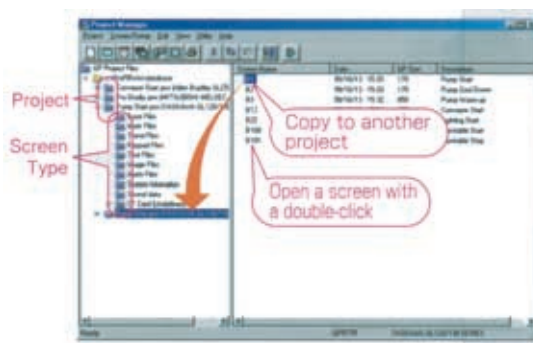
Simple Communication Methods

Adjustable Switch Sizes and Layot
- Minimum Touch Switch Size: 20X20 pixels
- 1 or 2 point touch selectable
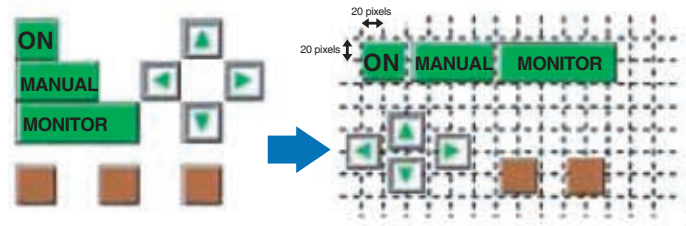
Parts

[1,800 Part to Choose]

Over 1800 parts and symbols are stored in the GP-PRO/PBⅢ library. Just select the ones you need and place them onto your application screens.

Touch/Switches/Lamps/Graphs/Numeric Displays/Picture Displays/Alarm Displays/Data Displays

Switches

Tank Graphs

Lamps

Library Parts
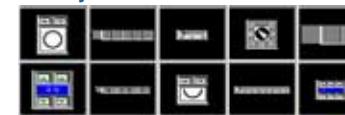
[Historical Alarm Display]
- Display Types: Active, Historic, Log
- Time format: hours, minutes, and even seconds* can be displayed.
  * Not supported by GP270 Series

● Printout

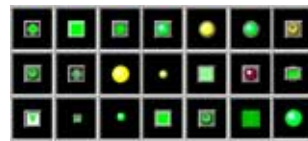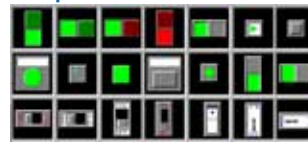Display screens can be easily printed out for daily report.
* Supported only by large-sized GP units GP377RT series

● Data Storage

Alarm data can be backed up in GP's backup memory.
* This feature is supported only by certain large-sized GP and GP377 series.

[Text Display]
Multiple character sets supported
- Fonts: ASCII (English and European) Chinese, Japanese, Korean, and Taiwanese fonts.
- Font Styles: Normal, Bold, Raised.

[Image Display]
Photo and CAD images can be imported

BMP image display

DXF image display

- Importable Files
  DXF: Common file format for CAD and 3D screens
  BMP: Image format for pictures from digital cameras or image scanners

[Alarm Summary]
Allows easy machine condition monitoring and fast maintenence

- Alarm Types: summary display, message scrolling
- Sub. Windows can be easily set up for detailed in matim

Sub-Window Image

Detailed information for an individual alarm message can be displayed in a sub-window. You can easily create an on-line manual for quick maintenance.

[Picture Display]
Enable to visualizes entire systems

- Graphics: Dot, Line, Polyline, Square/ rectangle, Fill, Polygen, Circle,
- Oval, Arc, Pie, Scale, Mark, ISO-7000 Mark Libraries Attributes: Lighted, blink, reserve, off

[Graph Display]
Various Types of Graphs to Visualize Important Data

- Data Foramat: 16-bit absolute/indirect data
- Data Display Format: Binary, BCD
- Warning Display: direct/indirect setup for maximum and minimum ranges

Graph Level Status by Colors
Fill-Below-Line for Trend Graph
Tank Graph (Library parts)
Meter Graph (parts)*

* These features not supported by GP270 series

Screen Editing

[Dublicate Copy]

Specifying the nuber of columns and rows to be muliplied will allow you to easily make multiple copies of any object. Addres incrementation can also be performed automatically.
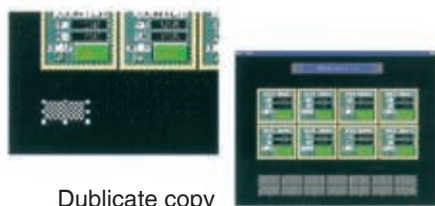
Dublicate copy

Enlarging and reducing Drawing Area

[Object Drawing]

With a rich array of drawing tools, screens can be drawn quickly and easily - like CAD software.
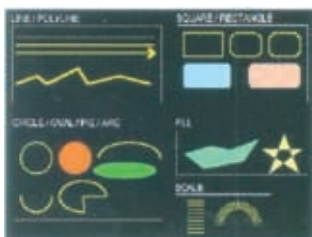
[Active Window]

- Up to 3 window screens can be displayed a single base screen, all simultaneously displaying animated data.
- Global Window: (1/screen) A common window for all screens
- Local Window: (2/screen) Unique window display for each screen
- Screen overlay order can be changed with a touch.

[Video Display]
Video feeds provide live data

* This feature is only supported by GP-570VM.

- Video Display Size: standart mode, zoom mode
- Transparent display of Video Window
- 3 NTSC video input channels
- VGA disolay (640X480 pixel)
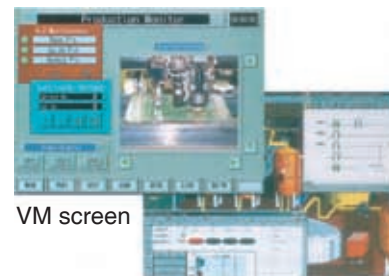
VM screen

VGA screen

Powerful Programming Tools

[Tags]

Tags are used for the creation of your screen animation functions. 30 different tag functions have been prepared for the GP Series units. Combinations of these tags produce a wide variety of functionallity, allowing you to expand the scope of your applications.

* Depending on the GP models, supported Tag features variety.

Tag Features

Touch Switch
  <touch panel input>
  <keyboard setup>
  <selector switch input>
  <inching function>
Numeric Display
  <numeric display>
  <static data display>
  <alarm boundary display>
Graph Display
  <graph display>
  <static graph display>
  <static data display>
Trend Graph Display
Setting Input
  <key input<
  <keyboard setup>
  <alarm boundary>

Alarm Summary
  <alarm summary text display>
  <alarm summary display>
  Alarm Message Display>
Graphic Display
  <object drawing>
  <library display>
  <library static display>
  <mark display>
Animated Objects
  <free library display>
  <moving mark display>
  <rail settings>
Character Display
  <string display>
  <display text data>
Time Display
  <time display>
Device Write
Window Display
  <window display>
Video Window Display
  <video window display>

["D-Script"-Macro Programming Language]
Implemet a variety of simple control tasks with this powerful tool

features include:
- Math: +, -, *, /, Remainder, Assign
- Boolean: AND, OR, NOT, <, <=, >, >=, EQUAL, NOT EQUAL
- Triggers: Timer settings, Bit Rising,   Bit Falling, when expresion   becomes True/False
- Functions: Load screen,Draw

* Some of the above features are not supported by GP-270

A Wide Range of Supported Data Formats

Sound Output Function

An optional unit allows WAV format files (i.e. sound, alarm) to be imported to the GP, and played through an external speaker. This feature can be used in a variety of applications, such as multi-media, and machine operator information.

CF Card Support (Compact Flash)

Filing CSV data

Trend data, sampling data and alarm active/history/log data can all be exported to the CF card using the CSV file format. Database and spread sheet applications can then easily import this data for information managament and processing.

Screen Data Storage

A screen project on GP unit can be copied on a CF card for maintenance purpose. Prior to copying the project to onather GP unit system, set up on the GP unit is required.

Memory Expansion on CF card

In addition to the internal memory on GP unit, following data can be stored for GP operation:
・Filing Data
・Logging Data
・Sampling Data
・Trend Graph Data
・Alarm Data
・Image Data
・Sound Data
　Screen Project Data

* Multi Unit E required

Dynamic Link between Operations and Control

● **Simple input/output operations can be performed by merely dragging and dropping. You need no knowledge of programming.**

All the data required for the parts on the screen (addresses, name plates, and names) are automatically passed by dragging and dropping the coresponding cymbols created on the ladder over the screens of the GP-PRO/PBⅢ for Windows. You no longer need to prepare detailed design specifications to notify addresses. Thos allows for impelmenting the true integration of display and control features, increasing the work efficiency greatly, and reducing the number of processes significantly.

Dragging and dropping

Pro-Control Editor V2.0
(under Development)
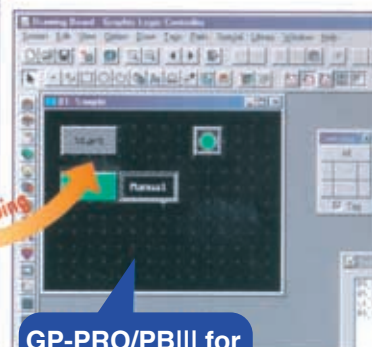
GP-PRO/PBⅢ for Windows V4.0

Universal File Format Support Reduces data Duplication

Text

DXF

CSV (chart)

Version Up

WAV (sound)

BMP

RTF
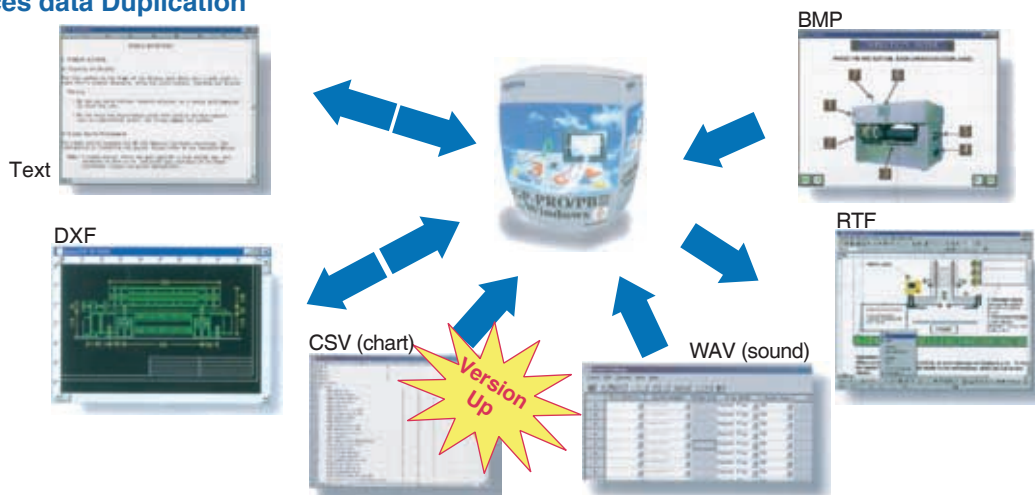
Screen Data from all previous GP Series can be converted to the latest models, also

Direct Connection to Field Network

[Profibus-DP]
Profibus-DP I/F Unit (GP070-PF11)

Max.Raud Rate	12Mbps
Max.Node	64
Max.I/O	IN : 64 Words
	OUT : 64 Words

[Units Supported]
SIEMENS
SIMATIC S7-300/400 Series, as well as other Profibus-DP supporting PLCs.

CE

[DeviceNet]
Device Net Unit (GP070-DN41)

Max.Raud Rate	500Kbps
Max.Node	64
Max.I/O	IN : 127 Words
	OUT : 127 Words

CE UL cUL

[Interbus]
Interbus Unit (GP070-IB41)

Max.Raud Rate	500Kbps
Max.Node	512
Max.I/O	IN : 64 Words
	OUT : 64 Words

NEW

CE UL cUL

[Ethernet]
GP Ethernet I/F Unit <10-Base-T>
(GP070-ET41)

CE UL cUL

[CC-Link]
CC-Link I/F Unit (GP070-CL11)

Max.Raud Rate	100Mbps
Max.Node	64
Max.I/O	IN : 128 Bits
	OUT : 128 Bits

[Units Supported]
Mitsubishi Electric Corp. PLC
MELSEC A Series
MELSEC QnA Series

[DeviceNet]
Device Net Unit (GP070-DN41)

Max.Baud Rate	500Kbps
Max.Node	64

[Units Supported]
Fuji Electric Co., Ltd.
MICREX-F Series PLC

* The above communication interface modules are only for GP-470 or larger units.

Additional fieldbus Network Units Supported

Fieldbus	Module *1	GP Model
AB Remote I/O	QPI-ABR-201	GP47*/57* series GP470/570, GP477R/577R Series
	QPJ-ABR-201	GP270/370 series
AB DH+	QPI-ABD-201	GP47*/57* series GP470/570, GP477R/577R Series
	QPJ-ABD-201	GP270 series
ModbusPlus	QPI-MDP-201	GP47*/57* series GP470/570, GP477R/577R Series
	QPJ-MDP-201	GP270 series

*1 Manufactured by total Control Products, Inc.

GP77 Series Standard Features

[Peripheral Device Connections]

Direct Connection to Various Networks

Communication Module Interface

Direct connection to various Feield networks becomes possible by attaching communication modules.

Real-time Operation

Auxiliary Input/ Output (AUX)

From the touch panel, you can send information to the PLC or to machine's DIO I/F in real time.

(Touch output: 8 points, system alarm output: 1-puint, buzzer output: 1-point, remote reset: 1-point)

* Only supported by GP-47* or larger units

Communication whit a host Controller

Serial (SIO) Interfaces

A single cable is all you need for host communication, reducing maintenance time.

Connecting to a color Printer

Printer interface

You can printout GP screens while in RUN mode. Alarm history data, including trigger/recovery times can also be printed.

Screen Data Transfer

Tool Connector

This interface is used for transfering screen data createdby GP-PRO/PB Series. Also, you can connect a bar-code reader to the GP.

PC Screen Data

VGA Input Interface

Your PC's VGA screen can be displayed on GP 570 VM unit.

Video Display from Cameras and Recorders

NTSC Video Input Interface (3 channels)

NTSC Video images can be displayed in a window on certain GPs. Window display size and position can be changed, in addition to zooming and channel switching, from touch panel operation or host controller.

(Theese features are only supported by GP-570VM unit.)

Communication Module
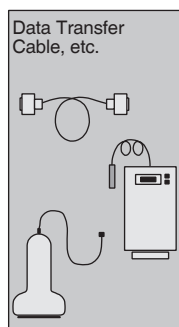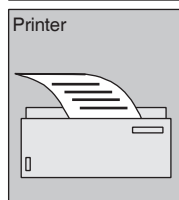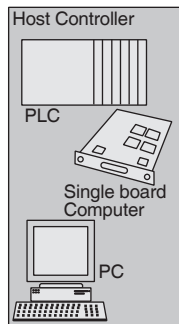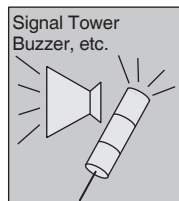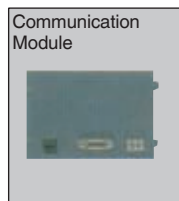
(Example: GP-675T Rear face)
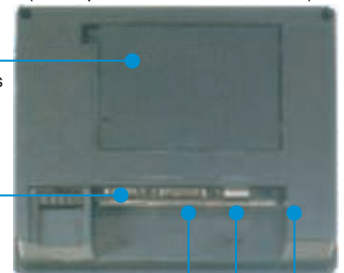
Communication Module Interface

* Only supported by GP-47* or larger units

Signal Tower Buzzer, etc.

Auxiliary Input/Output (AUX)

DC24V Parallel
I/F cable (user made)
* Only supported by GP-470 or larger units

Host Controller

PLC

Single board Computer

PC

Serial Interface

RS-232C (Max 15m)
RS-422 (max 600m)
*host controller connection distances differ

Printer

Printer Interface

Only supported by GP-47 or larger units

Data Transfer Cable, etc.

Tool Connector

Data Transfer Cable
Memory Loader ||
Bar-code Reader

(GP-570VM)

Connectable Barcode Readers

Make	Welcome Design
Touch Type	Model 1090
Handheld Type	Model 1240
Foxed Type	Model 1045

VGA Input Interface (3ch)
RGB Cable (commercially available type)

CCD camera, VTR, TV output, etc.

PC
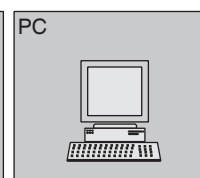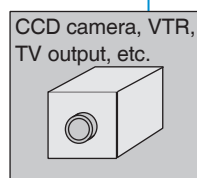
VGA Interface

Only for GP-570VM unit.

Connections with a PLC

Programless Communication
Connections with many different types of PLCs throughout the world

The direct access method supports 76 protocols for PLCs from 25 manufacturers world wide, meeting diverse requirements or customers.

Host controller
Data inquiry
PLC
I/O memory table
Response
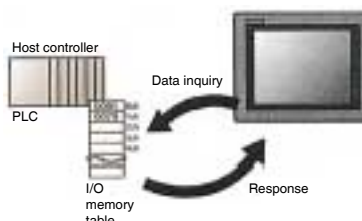
Connections with Multiple PLCs
Multi-link Connections
Neither a dedicated device nor a special program ir required

Multiple GP series units may be directly connected at ease to a single host (computer) link unit for PLCs by the direct access method without using any dedicated device or special program.

* For multilink connections, it is recommended that our multi-link cable (GP230-IS12-O) or RS-422 terminal bracket conversion adapter (GP070-CN10-O) is used.

Host PLC link unit

Maximum extended length of RS-422 cable: Max 600 meters

RS-422 cable (GP230-IS12-O)

GP series

GP series (up to 16 units may be connected)
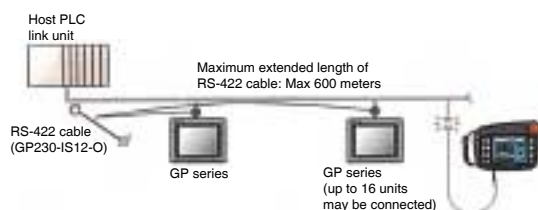
Memory link expansion capability:
· Multiple GP units may be connected to a single personal computer or microcomputer board.
· Graphic data can be transferred from the host controller to the GP unit.
· The transmitted and received data can be checked for errors including those in check sums, CR, LF, ACK and NAK.

Direct Connection with a PLC
Direct Connection with the CPU Programming Port
System configuration at low costs

The supported protocol allows the GP series unit to be connected directly to the CPU programming port.

* Applicable PLCs: PLC MELSEC A series/QnA series/FX series of Mitsubishi Electric Corp.

2-port Adapter II

This compact adapter allows you to use both the GP series unit and the PLC's peripheral units for the efficient transfer, monitoring, and debugging of a PLC program.
 ・The direct mode can be selected for high-speed communication.
 ・Isolated signals via 2 port Adapter II avoids noise interference to PLC' CPU.

* The GP430-IP10-O and GP430-IP11-O are not applicable
* Applicable PLCs: PLC MELSEC A series/QnA series/FX series of Mitsubishi Electric Corp.

Connected to a peripheral device
PLC programming software
RS-422 cable for two-port adapter II (GP070-MDCB11)
GP series

PLC
Single-board computer
Data table
Memory table
Up to 32 GPs may be connected to a single host computer
Barcode reader
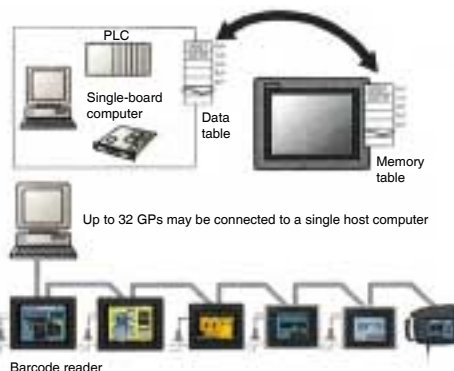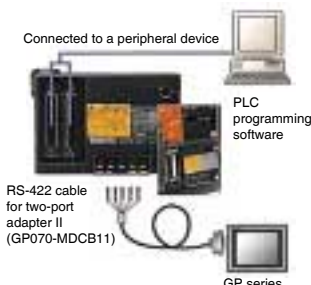
GP Maintenence

[Easy Backlight Replacement]

Service personell can easily replace the backlight right on the factory floor, reducing maintenance time.

* Not available with GP-570L, GP-H70 and GP377RT Series units.

[Screen Data Exchange]

Memory Loader II (GP070-LC01-O)
You can transfer GP screen data to an Flash Memory Card via on the Memory Loader II. This allows you to update GP screen data without a PC. This device is also handy for duplicating applications.

* Prior to using this tool, the GP must be set up.
* Please check the version for applicable GP unit.

[IP65f Rating]

All GP units are suitable for installation in machines used in wet or dusty areas. (Applies to the front panel of a unit mounted in a flat panel)

* Does not include GP-H70 Series unit.

32 bit RISC CPU POWER

Connectable PLCs and temperatur Controllers

Fanuc

Series Name	CPU	Link	Direct
FANUC Power Mate (Motion Controller)	Powe Mate-MODEL D		O
FANUC Series	16-MC	O	

FATEK

Series Name	CPU	Direct
FACON FB	20MC	O

Fuji

Series Name	CPU	T-Link	Link	Direct
MICREX-F	F30		O	
	F50		O	
	F60		O	
	F80		O	
	F80H	O	O	O
	F81		O	
	F120		O	
	F120H		O	
	F120S		O	
	F200		O	O
	F250		O	
	F70S	O	O	O
FLEX-PC	NB1		O	O
	NB2		O	O
	NB3		O	O
	NJ		O	O
	NS		O	O

GE Fanuc Automation

Series Name	CPU	Link	Direct
Series 90-30	CPU311/CPU331	O	O
Series 90-70	CPU731/732	O	
	CPU771/772	O	
	CPU781/782	O	

Hitachi

Series Name	CPU	Link	Direct	Multilink	DeviceNet
HIDIC-S10α	2α/2αE	O			
	4α/4αF	O			
HIDIC-H	H20		O		
	H28		O		
	H40		O		
	H64		O		
	H-200		O		
	H-252C		O		
	H-300	O	O		
	H-700	O	O		
	H-2000	O	O	O	
	H-2002	O	O	O	
	H-4010	O	O	O	
	EH-150		O		
HIDAC EC	EC-40HR		O		
S10 mini	S10min	O			O

Izumi

Series Name	CPU	Link	Direct
FA-2	PF2-CPU1		O
	PF2-CPU5M		O
FA-2J	PF2J-CPU1		O
FA-3S	PF3S-CP11		O
	PF3S-CP12	O	O
	PF3S-CP13	O	O
MICRO³	MICRO³		O

Keyence

Series Name	CPU	Link	Direct	Multilink
KEYENCE	KZ-300	O		O
	KZ-A500	O	O	
	KZ-350	O		O

Koyo / PLC Direct

Series Name	CPU	Link
KOSTAC SG	SG-8	O
KOSTAC SU	SU-5/6/6B	O
KOSTAC SZ	SZ-4	O
KOSTAC SR	SR-21/22	O
DL-205	D2-240	O
DL-305	D3-330	O
DL-405	D4-430/440	O

Matsushita Electric Industrial

Series Name	CPU	Link
Pandac 7000	P7000-PLC-001	O
	P7000-PLC-031H	O
	P7000-PLC-031S	O
	P7000-PLC-A01	O

Matsushita Electric Works

Series Name	CPU	Link	Direct	Multilink
MEWNET	FP3/5	O		
	FP10(S)	O		O
	FP1	O	O	
	FP-M	O	O	
	FP10SH	O		O
	FP2	O		
	FPQ-C32CT	O	O	
	FPQ-C16T	O	O	

Mitsubishi

Series Name	CPU	Link	Direct	Multilink	Ethernet	CC-Link
MELSEC-A	A2A	O	O	O	O	O
	A3A	O	O	O	O	O
	A2U	O	O			
	A4U	O	O			
	A2U-S1		O		O	O
	A2US	O	O		O	O
	AZUS-S1		O			
	AZUSH-S1	O	O	O		O
	A2SH	O	O	O		
	A3U	O	O			
	A0J2	O		O		
	A0J2H	O		O		
	A1N	O		O		
	A2N	O	O	O	O	
	A3N	O	O	O		
	A3H		O			
	A2CJ-S3		O			
	A1S	O	O	O		
	A1SH	O	O	O		
	A1SJ	O	O	O		
	A2CCPUC24	O	O	O		
MELSEC-F2	F2-20M	O				
	F2-40M	O				
	F2-60M	O				
MELSEC-FX	FX0		O			
	FX1		O			
	FX2		O			
	FX2C		O			
	FX2N-64MR		O			
	FX0N-32MT		O			
	FX0N-60MR		O			
	A1Fx		O			
	FX2N	O				
	FX2NC-64MR		O			
MELSEC-QnA	Q2A	O	O	O		
	Q2A-S1		O	O		
	Q2AS	O	O	O		
	Q2ASH	O				
	Q2AS-S1	O	O	O		
	Q3A					O
	Q4A	O	O	O		O

Modicon

Series Name	CPU	Direct	Modbus Plus (n:m)
Modbus Master	——	O	
Modbus Slave	——	O	
884/984	884	O	O
	984 A/B	O	O

Omron

Series Name	CPU	Link	Direct	Multilink	DeviceNet
SYSMAC C	C20H	O	O		
	C28H	O			
	C40H	O			
	C120	O		O	
	C120F	O		O	
	C200H	O		O	
	C200HS	O	O	O	
	C500	O		O	
	C500F	O		O	
	C1000H	O		O	
	C1000HF	O		O	
	C2000	O		O	
	C2000H	O		O	
	CQM1-CPU11		O		
	CQM1-CPU42		O		
	CPM1-20CDR-A	O	O	O	
	SRM1-C02	O	O	O	
	CPM2A	O	O		
SYSMAC CCS1	CS1H				O
	CS1G				O
SYSMACα	C200HX-CPU64	O		O	
	C200HE-CPU42	O		O	
	C200HG-CPU43	O		O	
	C200HX-CPU85-Z	O			
	C200HX-CPU44	O			
	C200HG-CPU63	O			
	C200HE-CPU42-Z	O			
	C200HX-CPU64-Z	O		O	
SYSMAC CV	CV500	O		O	
	CV1000	O		O	
	CVM1	O		O	
SYSMAC CS1	CS1H	O	O	O	
	CS1G	O	O	O	

ORIM VEXTA

Series Name	CPU	Link
E1	CPU11	

Rockwell

Series Name	CPU	Link	Ch.O	DH+	DH485	Remote I/O	Multilink	DeviceNet
AB SLC500	SLC-5/01			O				
	SLC-5/02			O				
	SLC-5/03	O		O		O		
	SLC-5/04	O		O	O	O	O	
AB PLC-5	PLC-5/11	O	O					
	PLC-5/20	O	O	O		O		O
	PLC-5/30	O	O					
	PLC-5/40	O	O					
	PLC-5/40L	O	O					
	PLC-5/60	O	O					
	PLC-5/60L	O	O					

Sharp

Series Name	CPU	Link	Direct	Multilink
New Satellite JW	JW20	O		
	JW-32CUH	O		
	JW50	O		
	JW70	O		
	JW100	O		
	JW-32CUH1	O		
	JW-32CUH3	O		O

Shinko

Series Name	CPU	Link
SELMART	SELMART	O

Siemens (SIMATIC)

Series Name	CPU	Prgm Port	3964/RK512	Profibus	MPI	Interbus
S5	90U	O	O			
	95U	O	O			
	100U	O	O			
	115U	O	O			
	135U	O	O			
	155U	O	O			
S7-200	CPU212	O				
	CPU214	O				
S7-300	CPU312IFM				O	
	CPU313		O		O	
	CPU314		O		O	
	CPU315		O		O	
	CPU315DP		O	O	O	
S7-400	CPU413-2DP		O	O	O	O

Toshiba

Series Name	CPU	Link	Multilink	Ethernet
PROSEC EX	EX2000	O		
PROSEC T	T2E	O		
	T2N	O		O
	T3	O	O	
	T3H	O		O
PROVISOR B	B200CH	O		
	B200CUF	O		
	B200CURM	O		
	B200CUFRM	O		

Toshiba Machine

Series Name	CPU	Link
PROVISOR TC200	TCCUH	O
	TCCUL	O

Toyota

Series Name	CPU	Link	1:n
TOYOPUC-PC2	PC2	O	
	L2	O	
	PC2J	O	O
TOYOPUL-PC3J	PC3J	O	O

RKC

Series Name	CPU	1:n
CB Series	CB-100 Z-1021	O
	CB-400 Z-1021	O
	CB-500 Z-1021	O
	CB-700 Z-1021	O
	CB-900 Z-1021	O
SR-Mini	H-RAP-A Z-1021	O

Yaskawa

Series Name	CPU	Link	Direct	Multilink
Memocon SC	U84	O		
	U84J	O		
	U84S	O		
	GL40S	O		
	GL60S	O		
	GL60H	O		
	GL70H	O		
	GL120	O	O	O
	GL130	O		
Control Pack	CP-9200		O	
	CP-9200H		O	
	CP-9200SH	O		
Memocon Micro	Micro			O
PROGIC-8	PROGIC-8 PC01	O		
	MP930		O	
	MP920	O	O	

Yokogawa

Series Name	CPU	Link	Direct	1:n	1:m	n:m	Ethernet
FACTORY ACE	FA500	O		O			
	FAM3	O	O	O	O	O	O

Yamataka

Series Name	CPU	1:n
SDC	SDC20	O
	SDC21	O
	SDC30	O
	SDC31	O
	SDC40A	O
	SDC40B	O
	SDC40G	O

GP77 Series

GP-577RT

GP-577RS

GP-477RE

GP-377RT

GP-377S

GP-377L

GP70 Series 9"/10.4"/12.1"

32 bit RISC CPU POWER

GP-675T

GP-675S

GP-571T

GP-570VM

GP-570T

GP-570S

GP-470E

GP70 Series 5"/6"

GP-370S
GP-370L

GP-270S
GP-270L

GP-H70S

GP-H70L

		CE Marked Units	UL/c-UL Approved Units			
			℞	c℞	Ⓤ	Ⓤ
12.1"	GP675T	O	O			
	GP675S					
10.4"	GP577RT	O			O	
	GP577RS					
	GP571T					
	GP570VM					
	GP570T	TC21-24VP	TC31-24V			
	GP570S	SC21-24VP	SC31-24V			
9"	GP477RE	O			O	
	GP470E	EG21-24VP	EG31-24V			
6"	GP377RT	O			O	
	GP377S	O			O	
	GP377L	O			O	
	GP370S	O			O	
	GP370L	O			O	
5"	GP270S	SC21-24VP	SC31-24V			
	GP270L	LG21-24VP	LG31-24V			
	GP-H70S	O	O			
	GP-H70L	O	O			

Global Support Network

Pro-face HMI B.V. Scandinavia

Pro-face HMI B.V.

Europe 31

Asia 26

North America 2

Pro-face UK

Oceania 3

Pro-face America Inc.

Pro-face HMI B.V. France

Digital Electrpnics Corp.

Pro-face HMI B.V. Germany

Pro-face HMI B.V. Italy

Pro-face Corea Co., Ltd.

Pro-face taiwan Co., Ltd.

Functional Specifications (GP77 Series Units)

Item		Model	GP577R-TC11 GP577R-TC41-24VP	GP577R-SC11	GP477R-EG11 GP477R-EG41-24VP	GP377R-TC11-24V GP377R-TC41-24V	GP377-SC11-24V GP377-SC41-24V	GP377-LG11-24V GP377-LG41-24V
Display	**Type**		TFT Color LCD	STN Color LCD	High Intensity EL	TFT Color LCD	STN Color LCD	Monochrome LCD
	Colors		64 colors (Tiling patterns make blends of colors possible)		Amber	64 colors (Tiling patterns make blends of colors possible)		black and white
	Backlight		CCFL (under normal temperatures and humidity, lifespan = more than 40 000) User replacable	CCFL (under normal temperatures and humidity, lifespan = more than 25 000) User replacable	——	CCFL (under normal temperatures and humidity, lifespan = more than 50 000)	CCFL (under normal temperatures and humidity, lifespan = more than 30 000) User replacable.	
	Resolution		640 x 480 pixels		640 x 400 pixels	320 x 240 pixels		
	Nominal Display Area		211.2 mm (W) x 158.4 mm (H)		192mm(W)x120mm(H)	115.2 mm (W) x 86.4 mm (H)		
	Attributes		Blink / Reverse Video					
	Brightness Control		4 levels (via touch panel)		2 levels (via touch panel)	4 levels (via touch panel)		
	Contrast Control		____	8 levels (via touch panel)	____	8 levels (via touch panel)		
	Language fonts		ASCII: (Code Page 850) Alphanumeric (Incl. European fonts) *1 Chinese: (GB2321-80 codes) simplified Chinese fonts Japanese: ANK 158 type, Kanji: 6962 (Standard JIS Type 1 & 2) Korean: (KSC5601 - 1992 codes) Hangul font Taiwanese: (Big 5 codes) traditional Chinese fonts					
	No.of Char Display	**8x8 dot font**	80 characters per row, 60 rows		80 characters per row, 50 rows	40 characters per row, 30 rows		
		8x16 dot font	80 characters per row, 30 rows		80 characters per row, 25 rows	40 characters per row, 15 rows		
		16x16 dot font	40 characters per row, 30 rows		40 characters per row, 25 rows	20 characters per row, 15 rows		
	Font sizes		Character size: Height and width can be expanded 1, 2, 4 or 8					
	Application Memory		2MB FLASH EPROM			1MB FLASH EPROM		
	Touch Panel (Resistive Film)		32x24 Keys / screen; 1 or 2 point touch	32x20 Keys/screen;1or2 point touch		16x12 Keys / screen; 1 or 2 point touch		
Interfaces	**Serial**		Asynchronous transmission method: RS-232C/ RS-422 Data length: 8/7 bits; 2/1 bits; stop bits: 2/1 bits Parity: None/ Even/ Odd; Data Transmission Rate: 2400 bps to 115.2 kbps					
	Tool Connector		Asynchronous Transmission Method, TTL level, non-procedural command interface [during screen development] used for transferring application screen data [during RUN mode] used as Bar-code Reader of built-in 2-port function interface					
	Auxiliary Input/ Output (AUX)		Touch switch output (inching) DC24Vx8 points System alarm output DC24Vx1 point Buzzer output DC24Vx1 point Run output DC24Vx1 point			_____		
	Printer Output		Conforms to Centronix (HP LaserJet PCL4 compatible, NEC PR Series, EPSON ESC/P or equivalent)			_____		

General Specifications

Item		Model	GP577R-TC11	GP577R-SC11	GP477R-EG11	GP577R-TC41-24VP	GP477R-EG41-24VP	GP377R-TC11-24V GP377R-TC41-24V		
Electrical	**Input voltage**		AC85V to AC132V 50/60Hz			DC20.4V to DC27.6V				
	Power Consumption		50VA or less			50W or less (TVP 20W)		20W or less (TVP 13W)		
	Allowable Voltage Drop		Up to 20 ms			Up to 2 ms				
	Voltage Endurance		AC 1500V -20 mA 1 minute			AC 1000V -10 mA 1 minute (between charging and FG terminals)				
	Insulation Resistance		Above 10MW at DC500V (between charging and FG terminals)				Above 10MW at DC500V (between charging and FG terminals)	Above 20MW at DC500V (between charging and FG terminals)		
Environmental	**Ambient Operating Temperature**		0ºC to 40ºC	0ºC to 50ºC	0ºC to 40ºC	0ºC to 50ºC	0ºC to 40ºC	0ºC to 50ºC		
	Ambient Storage Temperature		-10ºC to 60ºC					-20ºC to 60ºC		
	Ambient Humidity		30 to 85% RH (non-condensing)	20 to 85% RH (non-condensing)	30 to 85% RH (non-condensing)	20 to 85% RH (non-condensing)				
	Vibration Resistance		10 to 25 Hz (X, Y, Z directions 30 minutes each 2G)							
	Noise Immunity (via noise simulator)		Noise voltage: 1200Vp-p Pulse length: 1 μs; Arise Time: 1ns			Noise voltage: 1000Vp-p Pulse length: 1 μs; Arise Time: 1ns				
	Atmosphere		Must not contain corrosive gas							
	Rating		Equivalent to IP65f (Limited to front face of GP installed in panel)							
Structural	**External Dimensions**		317mm(W)x243mm(H) x85mm(D) (GP unit only)	274mm(W)x216mm(H) x56.5Dmm(D) (GP unit only)	317mm(W)x243mm(H) x85mm(D) (GP unit only)	274mm(W)x216mm(H) x56.5Dmm(D) (GP unit only)	171mm(W)x138mm(H)x57mm(D) (GP unit only)			
	Weight		Less than 3.5 kg (GP unit only)	Less than 2.5kg (GP unit only)	Less than 3.5kg (GP unit only)	Less than 2.5kg (GP unit only)	Less than 0.95 kg (GP unit only)			
	Cooling Method		Natural air circulation							

*1 Japanese character input requires the Japanese version screen editor software.

32 bit RISC CPU POWER

GP SERIES
Programmable Operator Interfaces

Functional Specifications (10.4" and 12.1" Display)

Items	Model	GP570-TV11	GP675-TC11 GP675-TC41-24VP	GP675-SC11
Display	Type	TFT Color LCD		STN Color LCD
	Colors	8 colors (white, red, blue, green, yellow, purple, light blue, black) Tiling patterns make blends of colors possible	64 colors (Tiling patterns make blends of colors possible)	
	Backlight	CCFL (under normal temperatures and humidity, lifespan = 20 000 hours) User replaceable	CCFL (under normal temperatures and humidity, lifespan = 25 000 hours) User replaceable	CCFL (under normal temperatures and humidity, lifespan = 25 000 hours) Non-replaceable by user
	Resolution	640x480 pixels	800x600 pixels	
	Nominal Display Area	211mm(W)x158mm(H)	246mm(W)x184.5mm(H)	
	Features	Blank / Reverse Video		
	Contrast Adjustment	____		8 levels from touch panel
	Language Fonts	ASCII: (Code page 850) Alphanumeric (Incl. European fonts) *1 Chinese: (GB2321-80 codes) simplified Chinese fonts Japanese: ANK 158 type, Kanji: 6962 (Standard JIS Type 1 & ?) Korean: (KSC5601 - 1992 codes) Hangul font Taiwanese: (Big 5 codes) Traditional Chinese fonts		
	No. of Char. Display — 8 x 8 dot font	80 characters per row, 60 rows	100 characters per row, 75 rows	
	No. of Char. Display — 8 x 16 dot font	80 characters per row, 30 rows	100 characters per row, 37 rows	
	No. of Char. Display — 16 x 16 dot font	40 characters per row, 30 rows	50 characters per row, 37 rows	
	Font sizes	Character size: Height and Width can be expanded 1, 2, 4 or 8 times		
Application Memory		1MB FLASH EPROM	2MB FLASH EPROM	
Touch Panel (Resistive Film)		32x24 keys / screen; 1 or 2 point touch	40x50 keys / screen; 1 or 2 point touch	
Interface	Serial	Acynchronous transmission method: RS-232C/ RS-422; Data length: 8/7 bits; stop bits: 2/1 bits; Parity: None/ Even/ Odd; Data Transmission Rate: 2400 to 38400 bps		
	Tool Connector	Asynchronous Transmission Method, TTL level, non-procedure command interface <during screen development> used for downloading application screens <during RUN mode> used as Bar-code Reader interface		
	Auxiliary Input / Output (AUX)	Touch Switch Output: DC24Vx8 points; System Alarm Output: DC24Vx1 point; Buzzer Output: DC24Vx 1 point RUN output: DC24Vx1 point; Remote Reset Input: DC24Vx1 point		
	Printer Output	Conforms to Centronix (HP LaserJet PCL4 compatible, NEC PR Series, EPSON ESC/P or equivalent)		

General Specifications

Items	Model	GP570-TV11	GP675-TC11 GP675-TC41-24VP	GP675-SC11
Electrical	Input Voltage	AC85 to AC132V 50/60 Hz	GP675-TC11: AC85 to AC132V 50/60 Hz GP675-TC41: DC19.2V to DC28.8V	AC85 to AC132V 50/60 Hz
	Power Consumption	50VA or less	GP675-TC11: 50W or less GP675-TC41: 50VA or less	50VA or less
	Allowable Voltage Drop	Up to 20ms	GP675-TC11: Up to 20 ms GP675-TC41: Up to 2 ms	Up to 20ms
	Voltage Endurance	AC1500V 20mA 1 minute (between changing and FG terminals)	GP675-TC11: AC1500V 20mA 1minute GP675-TC41: AC1000V 10mA 1 minute (between charging and FG terminals)	AC1500V 20mA 1minute (between changing and FG terminals)
	Insulation Resistance	Above 10MW at DC500V (between changing and FG terminals)		
Environmental	Operation Temperature	0ºC to 40ºC		
	Storage Temperature	-10ºC to 60ºC		
	Ambient Humidity	30 to 85% RH (non-condensing)		
	Vibration Resistance	10 to 25 Hz (X, Y, Z directions 30 minutes 2G)		
	Noise Immunity (via noise simulator)	Noise voltage: 1200Vp-p(GP675-TC41: 1000Vp-p) Pulse length: 1 μs Arise time: 1 ns		
	Atmosphere	Must not contains corrosive gas		
	Rating	Equivalent to IP65f (Limited to front face of GP installed in panel)		
Structural	External Dimensions	317mm(W)x243mm(H)x85mm(D) (GP only)	346mm(W)x272mm(H)x81mm(D) (GP only)	
	Weight	Less than 3.5 kg (GP only)	Less than 3.8 kg (GP only)	
	Cooling Method	Natural Air Circulation		

VM Display Specifications

Items	Model	GP570-TV11
Video Display	Display Colors	32768 colors
	Input Channels	3 channels
	Transmission Method	NTSC
	Number of Video Screens	1 (size, location and channel are adjustable)
	Color Control	tone, brightness anc contrast
	Special Features	still (freezes video display), transparent color settings, and zoom
Input Signal Characteristics	Input Signal Method	Analog RGB
	Synchronous Signal	TTL level, negative true or positive true
	Scanning Type	Non-interlaced
Adjustment Controls	Flicker	8 level
	Brightness	4 level
	Horizontal Display Positioning	-16 to 15 pixels
	Vertical Display Positioning	-8 to 7 pixels
	Resolution	640x480 pixels
	Dot-clock Range	25.175 MHz +/- 1%

* Japanese character input require the Japanese version screen editor software

Functional Specifications

Items		GP571-TC11	GP570-TC**	GP-570-SC**	GP570-LG**	GP470-EG**
Display Functions	Type	TFT Color LCD		STN Color LCD	Monochrome LCD	High Intensity EL
	Color	64 colors (Tiling patterns make blends of colors possible)	8 colors (white, red, blue, green, yellow, purple, light blue, black) (Tiling patterns make blends of colors possible)		black and white	Amber (monochrome)
	Backlight	CCFL (under normal temperatures and humidity, lifespan - 20 000 hours) *1 User replaceable			CCFL (under normal temperatures and humidity, lifespan - 25 000 hours) Non-replaceable by user	____
	Resolution	640 x 480 pixels				640 x 400 pixels
	Nominal Display Area	211mm(W)x158mm(H)				192mm(W)x120mm(H)
	Features	Blink / Reverse Video				
	Brightness Control	____				2 levels from touch panel
	Contrast Control	____		8 levels from touch panel		____
	Language Fonts	ASCII: (Code Page 850) Alphanumeric (incl. European fonts) *1 Chinese: (GB2321 - 80 codes) simplified Chinese fonts Japanese: ANK 158 type, Kanji: 6962 (Standard JIS Type 1 & 2) Korean: (KSC5601 - 1992 codes) Hangul font Taiwanese: (Big 5 codes) traditional Chinese fonts				
No. of Char. Display	8 x 8 dot font	80 characters per row, 60 rows				80 characters per row, 50 rows
	8 x 16 dot font	80 characters per row, 30 rows				?0 characters per row, 25 rows
	16 x 16 dot font	40 characters per row, 30 rows				40 characters per row, 25 rows
	Font Size	Character Size: Height and Width can be expanded 1, 2, 4 or 8 times				
	Application Memory	3MB FLASH EPROM	1MB FLASH EPROM			
	Touch Panel (Resistive Film)	32 x 24 keys / screen: 1 or 2 point touch				32x20 keys / screen; 1 or 2 point touch
Interfaces	Serial	Asynchronous transmission method: RS-232C/ RS-422; Data length: 8/7 bits; stop bits: 2/1 bits; Parity: None/ Even/ Odd; Data Transmission Rate: 2400 to 38400				
	Tool Connector	Asynchronous Transmission Method, TTL level, non-procedure command interface <during screen development> used for downloading application screens <during RUN mode> used as Bar-code Reader interface				
	Auxiliary Input / Output (AUX)	Touch Switch Output: DC24Vx8points; System Alarm Output: DC24Vx1point; Buzzer Output: DC24Vx1point RUN Output: DC24Vx1point; Remote Reset Input: DC24Vx1point				
	Printer Output	Conforms to Centronix (HP LaserJet PCL4 compatible, NEC PR Series, EPSON ESC/P or equivalent)				

General Specifications

Items		GP571-TC11	GP570-TC**	GP570-SC**	GP570-LG**	GP470-EG**
Electrical	Input Voltage	AC85 to AC132V 50/60Hz	GP570-*C11: AC85 to AC132V 50/60Hz GP-570-*C21/ *C31: DC19.2 to DC28.8V		DC19.2V toDC28.8V	GP470-EG11: AC85 to AC132V 50/60Hz GP470-EG21/ EG31: DC19.2 to DC28.8V
	Power Consuption	50VA or less	GP570-*C11: 50VA or less GP-570-*C21/ *C31: 50W or less		50W or less	GP470-EG11: 50VA or less GP470-EG21/ EG31: 50W or less
	Allowable Voltage Drop	Up to 20ms	GP570-*C11: Up to 20ms GP-570-*C21/ *C31: Up to 2ms		Up to 2ms	GP470-EG11: Up to 20ms GP470-EG21/ EG31: Up to 2ms
	Voltage Endurance	AC1500V 20mA 1minute (between changing and FG terminals)	GP570-*C11: AC1500V 20mA 1minute GP-570-*C21/ *C31: AC1000V 10mA 1 minute (between changing and FG terminals)		AC1000	GP470-EG11: AC1500V 20mA 1 minute GP470-EG2124VP/ EG31-24VP: AC1000V 10mA 1 minute (between charging and FG terminals)
	Insulation Resistance	Above 10MW at DC500V (between the wire and ground terminals)				
Environmental Specifications	Operation Temperature	0ºC to 40ºC				0ºC to 50ºC
	Storage Temperature	-10ºC to 60ºC				
	Ambient Humidity	30 to 85% RH (non-condensing)				20 to 85% RH (non-condensing)
	Vibration Endurance	10 to 25 Hz (X, Y, Z directions 30 minutes 2G)				
	Noise Endurance	Noise voltage: 1200Vp-p; Pulse length: 1µs; Arise Time: 1ns	Noise voltage: GP570-*C11: 1200Vp-p. GP570-*C21-24VP/ *C31-24VP: 1000Vp-p Pulse length: 1µs; Arise Time: 1ns		Noise voltage: 1000Vp-p; Pulse length: 1µs; Arise Time: 1ns	Noise voltage: GP470-EG11: 1200Vp-p. GP470-EG21-24VP/ EG31-24VP: 1000Vp-p; Pulse length: 1µs; Arise Time: 1ns
	Atmosphere	Must not contain corrosive gas				
	Rating	Equivalent to IP65f (Limited to front base of GP installed in panel)				
Structural Specifications	External Dimensions (mm)	317mm(W)x243mm(H)x85mm(D) (GP only)				274mm(W)x216mm(H) x56.5mm(D) (GP only)
	Weight	Less than 3.5 kg (GP only)				Less than 2.5 kg (GP only)
	Cooling System	Natural Air Circulation				

1) With GP570-TC21-24VP units that are Rev. E or later, the estimated lifetime of the backlight is 40 000 hours (assuming 24 hour operation).
2) Japanese character input require the Japanese version screen editor software

Functional Spetifications (Medium Size Display Units)

Items		Model	GP370-SC**-24V*	GP370-LG**-24V*	GP270-SC**-24V*	GP270-SC**-24V*	GPH70-SC**-24V	GPH70-LG**-24V
Display Functions		Type	STN Color LCD	Monochrome LCD	STN Color LCD	Monochrome LCD	STN Color LCD	Monochrome LCD
		Color	8 colors (white, red, blue, green, yellow, purple, light blue, black) Tiling patterns make blends of colors possible	black and white	8 colors (white, red, blue, green, yellow, purple, light blue, black) Tiling patterns make blends of colors possible	black and white	8 colors (white, red, blue, green, yellow, purple, light blue, black) Tiling patterns make blends of colors possible	black and white
		Backlight	CCFL (under normal temperatures and humidity, lifespan = 20 000 hours) User replaceable				CCFL (under normal temperatures and humidity, lifespan = 25 000 hours) Non-replaceable by user	
		Resolution	320 x 240 pixels					
		Nominal Display Area	115mm(W)x86mm(H)		96mm(W)x72mm(H)		115mm(W)x86mm(H)	
		Features	Blink / Reverse Video					
		Brightness Control	2 levels from touch panel		_____			
		Contrast Control	8 levels from touch panel					
		Language Fonts	ASCII: (Code Page 850) Alphanumeric (incl. European fonts) *1 Chinese: (GB2321 - 80 codes) simplified Chinese fonts Japanese: ANK 158 type, Kanji: 6962 (Standard JIS Type 1 & 2) Korean: (KSC5601 - 1992 codes) Hangul font Taiwanese: (Big 5 codes) traditional Chinese fonts					
	No. of Char. Display	8 x 8 dot font	40 characters per row, 30 rows					
		8 x 16 dot font	40 characters per row, 15 rows					
		16 x 16 dot font	20 characters per row, 15 rows					
		Font Size	Character Size: Height and Width can be expanded 1, 2, 4 or 8 times					
		Application Memory	1MB FLASH EPROM		256KB FLASH EPROM		1MB FLASH EPROM	
		Touch Panel (Resistive Film)	16x12 keys/screen; 1 or 2 point touch					
		Function Keys	_____				12	
		Operation Switches	_____				One is located on the back of the case; the other is the front face's function swithc (OP.) key	
		Push Button Switch	_____				Push-Lock (E-Stop) type switch	
Interfaces		Serial	Asynchronous transmission method: RS-232C/ RS-422; Data length: 8/7 bits; stop bits: 2/1 bits; Parity: None/ Even/ Odd; Data Transmission Rate: 2400-38400 bps					
		Tool Connector	RS-232C Acynchronous Transmission Method, TTL level, non-procedure command interface <during screen development> used for downloading application screens <during RUN mode> used as Bar-code Reader interface					
		External Outputs	_____				DOUT: Two-point Open Controller: 5-24VDC, 50mA max OP: One-point Controller: 5-24VDC, 50mA max Buzzer: One-point Controller: 5-24VDC, 0.1-0.3A Push-Lock Switch: Single B-contact, rated 30VDC, 0.3A	

General Specifications

Items		Model	GP370-SC**-24V*	GP370-LG**-24V*	GP270-SC**-24V*	GP270-SC**-24V*	GPH70-SC**-24V	GPH70-LG**-24V
Electrical		Input Voltage	DC20.4V to DC27.6V					
		Power Consumption	20W or less (TYP10W)		12W or less (TYP8W)		12W or less (TYP10W)	
		Allowable Voltage Drop	Up to 2ms					
		Voltage Endurance	AC1000V 10mA 1 minute (between the live wire and ground terminals) *2					
		Insulation Resistance	Above 20MW at DC500V (between the live wire and ground terminals)					
Environmental Specifiactions		Operation Temperature	0ºC to 60ºC				0ºC to 40ºC	
		Storage Temperature	-20ºC to 60ºC					
		Ambient Humidity	20 to 85% RH (non-condensing)					
		Vibration Endurance	10 to 25 Hz (X, Y, Z dimensions 30 minutes 2G)					
		Noise Endurance	Noise voltage: 1000Vp-p Pulse length: 1µs Arise time: 1ns					
		Atmosphere	Must not contain corrosive gas					
		Rating	Equivalent to IP65f (Limited to front face of GP installed in panel)				Equivalent to IP63	
Structural Specifications		External Dimensions (mm)	171mm(W)x138mm(H)x57mm(D) (GP only)		172mm(W)x127mm(H)x58mm(D) (GP only)		237mm(W)x173mm(H)x52mm(D) (GP only)	
		Weight	Less than 0.9 kg (GP only)		Less than 0.8 kg (GP only)		Less than 0.87 kg (GP only)	
		Cooling System	Natural Air Circulation					

*1 Japanese character input require the Japanese version screen editor software
*2 With GPH70-**41-24V untits, the allowable power failure is AC500V, 10mA for 1 minute

Optional Items

Item			
Screen Editor Software GP-PRO/PBIII for Windows	2-Way Comunicator Pro-Server with Pro-Studio for Windows	Data Transfer Cable	Memory Loader II (Memory card included)
Catalog code GPW-PB01M-V40	PSW-ED01-V20	GPW-CB02	GP070-LD-O

Item			
for PLC commimication RS-232C Cable (5m)	for PLC commimication RS-422 Cable (5m)	for GP-H70 Series RS-232C Cable (3m)	for GP-H70 Series RS-422 Cable (3m)
Catalog code GP410-IS00-O (some PLCs require a different cable)	GP320-IS11-O GP23--IS12-O (For Multi-link)	GPH70-C232-O	GPH70-C422-O

Item		
userful for multi-link connection RS-422 Connector Terminal Exchange Adapter	for easy debugging Mitsubishi PLC A Series/QnA Series FX Series 2 Port Adapter II	RS-422 Cable for 2 Port Adapter II
Catalog code GP070-CN10-O	GP070-MD11	GP070-MDCB11

Item		
direct connection to programming port Mitsubishi A Series PLC Programming I/F Cable (5m)	direct connection to programming port Mitsubishi FX Series PLC Programming I/F Cable (5m)	direct connection to programming port Siemens S5 Series PLC Programming I/F Cable (5m)
Catalog code GP430-IP10-O	GP430-IP11-O	GP000-IS11-O

Item			
connector type RS-232C Cable for GP-H70 Series With D-SUB connector (3m)	for GP-H70 RS-232C Conversion Adapter	connector type RS-422 Cable for GP-H70 Series With D-SUB connector (3m)	for GP-H70 RS-422 Conversion Adapter
Catalog code GPH70-D232	GPH70-AP232-O	GPH70-D422	GPH70-AP422-O

Item		
CF Card	CF Card Front Maintenance Unit	Protective Screen Cover
Catalog code GP077-CF10 (8MB) GP077-CF20 (16MB)	GP070-CFFM10 (Under development)	GP370-DC10

Item				
Cover Sheets		Backlight Bulbs	User's Manual	
Catalog code Soft Type 10 sheets / set GP570-COVER-10P GP470-COVER-10P GP570/577-COVER-10P GP470/477-COVER-10P 20 sheets / set GP370-COVER-20P GP270-COVER-20P	Hard Type 5 sheets / set GP675-DF10-O GP570-DF10-O GP470-DF10-O GP570/577-DF10 GP470/477-DF10 10 sheets / set GP370-DF10-O GP270-DF10-O GPH70-DF10-O	GP675S-BL00-MS GP675T-BL10-MS GP570-BL00-MS *1 GP577RT-BL00-MS GP370-BL00-MS GP270-BL00-MS *1 With GP570-TC21-24VP units that are Rev. E or later, use backlight model: GP577RT-BL00-MS	GP-H70(S/L) GP-270(S/L) GP-370(S/L) GP-470E GP-570(T/S/L) GP-571T GP-675T GP-477R/577R GP-377R GP-377(S/L)	GPH70-MM11-STD-ENG GP270-MM11-ENG GP370-MM11-ENG GP470/570-MM21-ENG GP470/570-MM21-ENG GP470/570-MM21-ENG GP675-MM21-ENG GP477R/577R-MM11-ENG GP377R-MM11-ENG GP377-MM11-ENG

Operation Enviroment for Software

|	GP-PRO/PBIII Windows
PC	IBM Compatible
OS Version	MS-Windows 95/98/NT
Memory	16MB, or higer
Disk Space	30MB minimum 53MB maximum *1
Mouse	Windows 95/98/NT compatible
Printer	Windows 95/98/NT compatible *2

*1 40MB maximum for CD-ROM version
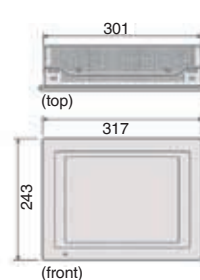*1 Printers with only Windows drivers cannot be used.

	Pro-Server with Pro-Studio
PC	IBM Compatible
OS Version	MS-Windows 95/98/NT
Memory	16MB, or higer
Disk Space	10MB or higer
Mouse	Windows 95/98/NT compatible
Printer	Windows 95/98/NT compatible
Ethernet	10BASE-2/5T
Protocol	TCP/IP
Others	Ethernet Hub, Ethernet cable

External Dimensions (mm)
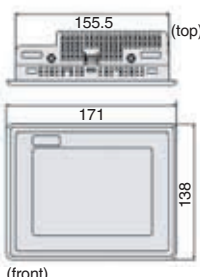
● GP-675
GP-675S
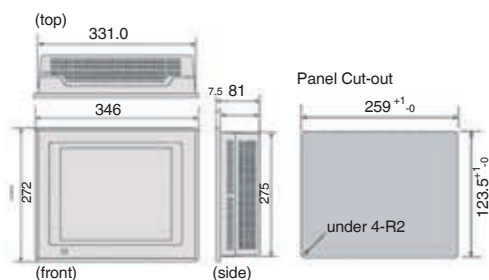
● GP-577RT   GP-571T
GP-577RS   GP-570VM
GP-570T
GP-570S
GP-570L
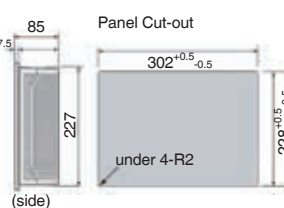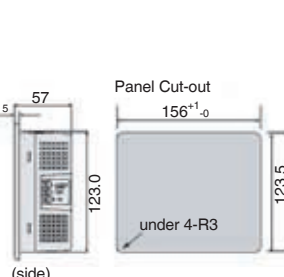

● GP-477RE
GP-470E
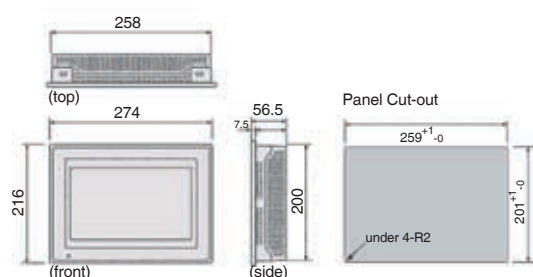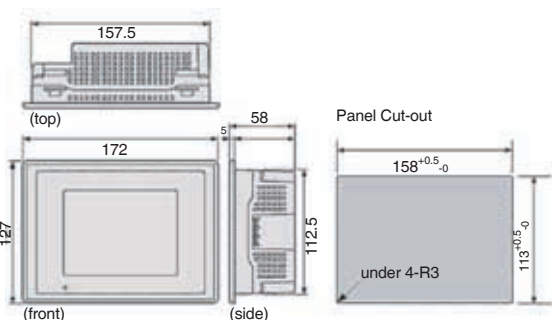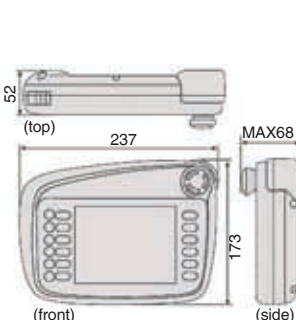

● GP-377RT   GP-377S
GP-377S   GP-370L
GP-377L

● GP-270S
GP-270L

● GP-H70S
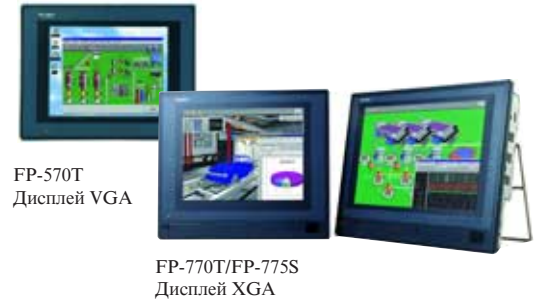GP-H70L

The Pro-face Family-HMI yhat you can count on

Panel Computer PL Series
IBM Compatible Industrial Panel Computers

PL-6700 Серия

PL-X900 Серия

PL-3700S

PL-B900 Серия

Flat Panel Display FP Series
Panel Displays that can replace your CRT, keyboard and mouse, and save valuable space

FP-570T
Дисплей VGA

FP-770T/FP-775S
Дисплей XGA

Graphic Panel GP Series
Programmable Operator Interface for Industrial Controllers

GP77R серия	GP70 серия	GP-PRO/PB III
100 MHz RISC CPU и	32 бит RISC CPU	Для Windows
2 способа подключения к сети		Экранный редактор

Graphic Logic Controller GLC Series
Programmable Operator Interface with I/O control features.

GLC300T

GLC100 Серия

Pro-Control редактор

Klinkmann - total solution for HMI

Wonderware InTouch is with 150.000 installations world leading HMI/SCADA PC software. InTouch is part of Wonderware FactorySuite , which offers also Industrial SQL Server automation database, SuiteVoyager automation internet portal, Terminal erver thin client server, InControl SoftPLC etc.

Klinkmann's development develop interface and wireless automation software for various automation devices incl. Siemens, ABB, Profibus, Interbus and thernet. Klinkmann software is used in over 60 countries araound the world.
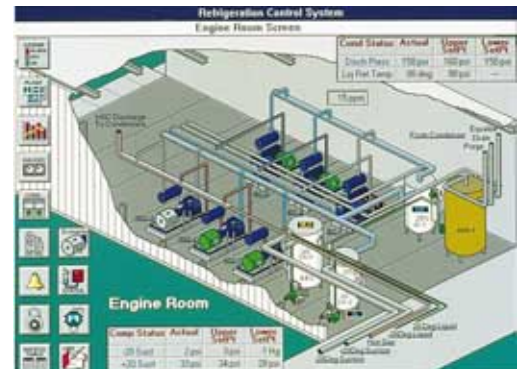
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